

CLAIMS

1. A communication terminal apparatus to be connected to a communication network through a control operation using a Point to Point Protocol (PPP), characterized by comprising:

a phase information combination section for combining a plurality of control phase information items regarding the PPP with each other;

an encapsulation section for converting data created by the phase information combination section to conform to the communication network; and

a data transmission section to transmit the data converted by the phase information combination section via the communication network to a communication apparatus as a destination.

2. A communication terminal apparatus to be connected to a communication network using a Point to Point Protocol (PPP), characterized by comprising:

a plurality of phase processing sections for executing a plurality of control processings for the PPP connection in parallel;

a data receiving section for receiving data via the communication network from a communication partner;

a packet development section for discriminating a phase information item in the data received by the receiving section and transmitting the phase information item to a phase processing section

conforming thereto;

a phase information combination section for receiving the phase information items processed by the plural phase processing sections and combining the plural phase information items with each other;

an encapsulation section for converting data created by the phase information combination section to conform to the communication network; and

a data transmission section for transmitting the data converted by the encapsulation section via the communication network to the communication partner.

3. A communication terminal apparatus according to claim 2, characterized in that the phase processing section comprises an LCP phase processing section, an authentication phase processing section, and an NCP phase processing section.

4. A communication terminal apparatus according to claim 1, characterized in that the phase information combination section combines an LCP information item, an authentication information item, and an NCP information item with each other.

5. A communication terminal apparatus according to claim 2, characterized in that the phase information combination section combines an LCP information item, an authentication information item, and an NCP information item with each other.

6. A communication terminal apparatus according to claim 3, characterized in that the phase information

combination section combines an LCP information item, an authentication information item, and an NCP information item with each other.

7. A network access apparatus to connect a communication terminal apparatus to a communication network using a Point to Point Protocol (PPP), characterized by comprising:

- a phase information combination section for combining a plurality of control phase information items regarding the PPP with each other;

- an encapsulation section for converting data created by the phase information combination section to conform to the communication network; and

- a data transmission section to transmit the data converted by the encapsulation section to the communication terminal apparatus.

8. A network access apparatus to connect a communication terminal apparatus to a communication network using a Point to Point Protocol (PPP), characterized by comprising:

- a plurality of phase processing sections for executing a plurality of control processings for the PPP connection in parallel;

- a data receiving section for receiving data via the communication terminal apparatus;

- a packet development section for discriminating a phase information item in the data received by the receiving section and transmitting the

phase information item to a phase processing section conforming thereto;

a phase information combination section for receiving the phase information items processed by the plural phase processing sections and combining the plural phase information items with each other;

an encapsulation section for converting data created by the phase information combination section to conform to the communication network; and

a data transmission section for transmitting the data converted by the encapsulation section via the communication network to the communication terminal apparatus.

9. A network access apparatus according to claim 8, characterized in that the phase processing section comprises an LCP phase processing section, an authentication phase processing section, and an NCP phase processing section.

10. A network access apparatus according to claim 7, characterized in that the phase information combination section combines an LCP information item, an authentication information item, and an NCP information item with each other.

11. A network access apparatus according to claim 8, characterized in that the phase information combination section combines an LCP information item, an authentication information item, and an NCP information item with each other.

12. A network access apparatus according to claim 9, characterized in that the phase information combination section combines an LCP information item, an authentication information item, and an NCP information item with each other.

13. A communication method of conducting communication between a communication terminal apparatus and a network access apparatus connected to a communication network using a Point to Point Protocol (PPP), characterized by comprising the steps of:

executing, by a transmission-side apparatus, a plurality of control processings for the PPP connection in parallel; creating a plurality of information items regarding control phases; and transmitting first data created by combining the plural information items, via the communication network to a receiving-side apparatus; and

discriminating, by the receiving-side apparatus, respective information items in the received first data created by combining the plural information items; executing a plurality of control processings corresponding to the information items in parallel; and transmitting second data created by combining information items regarding plural control results, via the communication network to the transmission-side apparatus.